

Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1.(Currently Amended) A transducer being adapted to sense acceleration in at least two mutually orthogonal directions, comprising:

~~an unbalanced proof mass, said transducer being adapted to sense acceleration in at least two mutually orthogonal directions; and~~

a first set of sense fingers aligned along a first axis.

2.(Original) The transducer of claim 1, wherein the transducer contains a single proof mass.

3.(Cancelled) The transducer of claim 1, wherein said transducer comprises a first set of sense fingers aligned along a first axis.

4.(Original) The transducer of claim 3, wherein said transducer further comprises a second set of sense fingers aligned along a second axis, and wherein said first and second axes are orthogonal.

5.(Original) The transducer of claim 4, wherein the first and second set of sense fingers have longitudinal axes that are parallel to a first plane.

6.(Cancelled) The accelerometer of claim 5, wherein one of said first and second axes is perpendicular to said first plane.

7.(Original) The transducer of claim 1, wherein said transducer is adapted to sense acceleration in three mutually orthogonal directions.

8.(Original) The transducer of claim 1, wherein said proof mass has a central portion with a plurality of sense fingers disposed therein, and opposing sides adjacent to said central portion that are of unequal mass.

9.(Original) The transducer of claim 8, wherein said opposing sides are of unequal dimensions.

10.(Currently Amended) The transducer of claim 1, further comprising first and second capacitive plates disposed beneath said proof mass, said plates being adapted to detect movement of the proof mass along an axis perpendicular to said first plane the surface of at least one of said first and second capacitive plates.

11.(Previously Amended) The transducer of claim 4, wherein each of said sense fingers in said first and second set is disposed between two parallel fingers that are fixably attached to a substrate.

12.(Original) The transducer of claim 1, wherein the proof mass is mounted to the substrate on a suspension that is compliant in at least two mutually orthogonal directions.

13.(Original) The transducer of claim 1, wherein said proof mass is mounted on a substrate, and further comprising two conductive plates that are mounted on the substrate under the proof mass.

14.(Original) The transducer of claim 4, wherein the first and second set of sense fingers are disposed in an arrangement that has at least one plane of mirror symmetry.

15.(Original) The transducer of claim 4, wherein the first and second set of sense fingers are disposed in an arrangement that has at least two planes of mirror symmetry.

16.(Currently Amended) The transducer of claim 14, further comprising two conductive plates, wherein said proof mass is mounted on a substrate, wherein said conductive plates are mounted on the substrate under the proof mass, and wherein said conductive plates are also disposed in an arrangement that has at least one plane of mirror symmetry ~~arranged with the same planes of symmetry as the first and second sets of sense fingers.~~

17.(Currently Amended) The transducer of claim 16, wherein there is a line of symmetry between the two conductive plates, and wherein the proof mass is asymmetrically disposed asymmetric about the line of symmetry between the two conductive plates.

18.(Original) The transducer of claim 1, further comprising a plurality of suspension springs that are disposed in an arrangement having at least two planes of symmetry.

19.(Original) The transducer of claim 1, wherein said transducer is a two layer transducer.

20.(Previously Amended) A transducer, comprising:

a proof mass having first and second sets of fingers adapted to sense acceleration along first and second mutually orthogonal axes;

first and second capacitive plates adapted to sense acceleration along a third axis that is orthogonal to said first and second axes; and

at least one anchor for said proof mass, said anchor being attached to said proof mass;

wherein the weight of the proof mass is asymmetrically supported by the at least one anchor.

21.(Original) The transducer of claim 20, wherein said first and second plates are disposed on the same side of said proof mass.

22.(Original) The transducer of claim 20, wherein said anchors and said first and second plates are supported on a substrate.

23.(Original) The transducer of claim 20, wherein said first and second plates are adapted to capacitively sense acceleration in a direction perpendicular to said first and second axes.

24.(Original) The transducer of claim 20, wherein said transducer is an accelerometer.

25.(Original) The transducer of claim 20, wherein said transducer is a two layer transducer.

26.(Currently Amended) A transducer, comprising:

an unbalanced proof mass;

first and second capacitive plates disposed beneath said proof mass, said plates being adapted to detect movement of the proof mass along an axis perpendicular to the plane of at least one of said first and second plates; and

a first set of sense fingers aligned along a first axis.

27.(Original) The transducer of claim 26, wherein said transducer further comprises a second set of sense fingers aligned along a second axis, and wherein said first and second axes are orthogonal.

28.(Cancelled) The transducer of claim 26, further comprising first and second capacitive plates disposed beneath said proof mass, said plates being adapted to detect movement of the proof mass along an axis perpendicular to said first plane.

29.(Currently Amended) A transducer, comprising:

a substrate;

a first conductive layer disposed on said substrate, said first conductive layer having first and second capacitive structures defined therein; and

a second conductive layer disposed over the first conductive layer ~~sacrificial layer~~;

wherein the second conductive layer has a proof mass and sense fingers defined therein such that the center of mass of the proof mass is asymmetrically disposed relative to said first and second capacitive structures.

30.(Cancelled) The method of claim 29, further comprising the step of removing at least a portion of the sacrificial layer to obtain release of the proof mass.

31.(Previously Amended) The transducer of claim 29, wherein said first and second conductive layers comprise polysilicon.

32.(Previously Amended) The transducer of claim 29, wherein the transducer is an accelerometer adapted to sense acceleration in a direction perpendicular to the substrate by measuring the capacitances between the proof mass and the first and second capacitive structures.

33.(Previously Amended) The transducer of claim 29, wherein the first and second capacitive structures are plates.

34.(Previously Amended) The transducer of claim 29, wherein said proof mass comprises a first set of sense fingers whose longitudinal axes are parallel to a first axis, and a second set of sense fingers whose longitudinal axes are parallel to a second axis.

35.(Previously Amended) The transducer of claim 29, wherein said proof mass comprises a plurality of compliant structures that support the proof mass above the first and second capacitive structures.

36.(Previously Amended) The transducer of claim 29, wherein said proof mass comprises a plurality of fixed fingers, and wherein each sense finger is disposed between a pair of fixed fingers.

37.(Previously Amended) The transducer of claim 29, wherein said proof mass comprises:

a first set of sense fingers whose longitudinal axes are parallel to a first axis, and a second set of sense fingers whose longitudinal axes are parallel to a second axis;

a plurality of compliant structures that support the proof mass above the first and second capacitive structures; and

a plurality of fixed fingers;

wherein each sense finger is disposed between a pair of fixed fingers, and wherein the first and second sets of sense fingers, the plurality of compliant structures, and the plurality of fixed fingers are disposed in an arrangement that has at least one plane of mirror symmetry.

38.(Currently Amended) The transducer of claim 37, further comprising a substrate, a first conductive layer, and a second conductive layer, wherein the first and second sets of sense fingers, the plurality of compliant structures, and the plurality of fixed fingers are formed in the second conductive layer, and wherein the arrangement has at least two planes of mirror symmetry about an axis a plane orthogonal to a major surface of the second conductive layer.

39.(Previously Amended) The transducer of claim 38, wherein the arrangement has at least a four-fold rotational axis of symmetry around an axis orthogonal to a major surface of the second conductive layer.

40.(Previously Amended) The transducer of claim 29, wherein the proof mass is asymmetrically disposed relative to said first and second capacitive structures plates.

41.(Previously Amended) The transducer of claim 29, further comprising a material disposed on a surface of the proof mass such that the center of mass of the proof mass is asymmetrically disposed relative to said first and second plates.

42.(Previously Amended) The transducer of claim 41, wherein the material comprises a metal.

43. (New) A transducer being adapted to sense acceleration in at least two mutually orthogonal directions, comprising:

a proof mass comprising a central portion equipped with a plurality of sense fingers, and further comprising opposing side portions, adjacent to said central portion, that are of unequal mass.

44.(New) The transducer of claim 43, wherein said side portions are of unequal size.

45.(New) The transducer of claim 43, wherein said side portions are of equal size.

46.(New) The transducer of claim 45, wherein at least one of said side portions has a metal disposed thereon.

47. (New) A transducer being adapted to sense acceleration in at least two mutually orthogonal directions, comprising:

a proof mass supported on a substrate, said proof mass having a first set of sense fingers aligned along a first axis; and

first and second capacitive structures disposed between said substrate and said proof mass;

wherein the center of mass of said proof mass is closer to said first capacitive structure than to said second capacitive structure.

48. (New) The transducer of claim 47, wherein said proof mass is supported on said substrate by a plurality of springs.

49. (New) The transducer of claim 47, wherein said first and second capacitive structures are supported on said substrate.

50. (New) The transducer of claim 1, wherein said proof mass is essentially planar, and wherein said proof mass is unbalanced when there is no acceleration along an axis perpendicular to the plane of said proof mass.

51. (New) The transducer of claim 26, wherein said proof mass is unbalanced when there is no acceleration along an axis perpendicular to the plane of at least one of said first and second plates.